

## REMARKS

### **Amendments**

Claims 1-11 and 13-15 are currently pending in the application upon entry of the foregoing amendments. Claims 1 and 15 are amended to include the limitation that the feed gas mixture comprises a carbon to oxygen ratio from about 0.5 to about 1.0. Support for these amendments is found in the Specification at paragraph [0037]. Reconsideration of the present application, as amended, and allowance of the pending claims is respectfully requested in view of the following remarks.

### **Rejection Under 35 U.S.C. § 112**

Claims 1 and 15 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite in a prior Office Action. The claims were amended by the Applicants in the RCE, Amendment, and Response to Office Action submitted on September 6, 2006. Accordingly, Applicants respectfully request the Examiner withdrawal the previous rejection under 35 U.S.C. § 112, second paragraph.

### **Rejection Under 35 U.S.C. §§ 102(b)/103(a)**

The Examiner rejected claims 1, 4-11, and 13-15 under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over U.S. Patent No. 6,409,940 to Gaffney, et al. (hereinafter "Gaffney"). The Examiner also rejected claims 1-11 and 13-15 under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Schmidt, et al. (hereinafter "Schmidt"). Applicants respectfully traverse the rejections.

The cited prior art does not anticipate the amended claims because they do not include each and every element of the claims as amended. Specifically, neither Gaffney nor Schmidt remotely teach or suggest a process for conversion of a feed gas mixture comprising a heavy

hydrocarbon fuel, the feed gas mixture comprising a carbon to oxygen ratio from about 0.5 to about 1.0.

Gaffney's disclosure is limited specifically to the conversion of light hydrocarbons in a feed gas mixture having a carbon to oxygen ratio from about 1.25 to about 3.3. For example, Gaffney provides that the "hydrocarbon feedstock may be any gaseous hydrocarbon having a low boiling point, such as methane, natural gas, associated gas, or other sources of light hydrocarbons having from 1 to 5 carbon atoms." (Col. 6, Lines 38-41). Gaffney further provides that the "methane-containing feed and the oxygen-containing gas are mixed in such amounts to give a carbon (i.e., carbon in methane) to oxygen (i.e., oxygen) ratio from about 1.25:1 to about 3.3:1." (Col. 6, Lines 55-60).

Schmidt's disclosure similarly is limited to the conversion of light hydrocarbons in a feed gas mixture having a carbon to oxygen ratio outside the range required by the Applicants' amended claims. For example, Schmidt provides that "the amounts of hydrocarbon, H<sub>2</sub>O, CO<sub>2</sub> and oxygen introduced into the partial oxidation (catalyst zone) are controlled to provide O<sub>2</sub>:C ratios of from about 0.2 to 0.8." (Col. 3, Lines 52-55). Those of ordinary skill in the art will appreciate that such ratios correspond to a carbon to oxygen ratio of 2.5 to 10.

**Rejection Under 35 U.S.C. § 103(a)**

The Examiner rejected claims 1-11 and 13-15 under 35 U.S.C. § 103(a) as being obvious over Gaffney in view of Schmidt. The Examiner further rejected claim 15 under 35 U.S.C. § 103(a) as being obvious over Gaffney in view of U.S. Patent No. 4,331,451 to Isogaya et al. (hereinafter "Isogaya") and further in view of Schmidt. Applicants respectfully traverse the rejections.

The cited prior art fails to establish a *prima facie* case of obviousness of the claims as amended because the cited references fail to disclose each and every element of the Applicants' amended claims. Specifically, neither Gaffney nor Schmidt, alone or in combination, remotely teach or suggest a process for conversion of a feed gas mixture comprising a heavy hydrocarbon fuel, wherein the feed gas mixture comprises a carbon to oxygen ratio from about 0.5 to about 1.0, wherein the process operates without the addition of steam or water as required by the Applicants' amended claims. Nor does Isogaya supplement the deficiencies of Gaffney and Schmidt to teach that the feed gas mixture comprises a carbon to oxygen ratio from about 0.5 to about 1.0.

In sum, the combination of the cited references fails to establish a *prima facie* case of obviousness. Accordingly, the rejections must be withdrawn.

### **Conclusions**

For the foregoing reasons, Applicants submit that claims 1-11 and 13-15 are patentable over the cited prior art. Allowance of the pending claims is therefore earnestly solicited.

If there are any issues which can be resolved by a telephone conference or an examiner's amendment, the Examiner is invited to telephone the attorney at (404) 853-8012.

Respectfully submitted,



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